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ABSTRACT

The purposes of the paper are to discuss use of a concept formation model in art education and to suggest ways in which teachers might plan and develop art instructional activities consistent with the model. Based upon a social studies model designed along the lines of Robert Gagne's learning theory, the art education model utilizes rule, concept, discrimination, and verbal information learning and problem solving. Section I describes ways of overcoming vague or incorrect student conceptions through use of the abstract, conditional, and utilitarian dimensions of concept definition. Section II relates concept clusters to art education and gives drawing as a concept which can be clustered with design, pattern, volume, depth, and perspective. The importance of rule learning in art education is discussed in section III, followed by an explanation of the need to develop student problem-solving skills in section IV. Section V describes ways of developing learning activities which are congruent with Gagne's five model levels. The bulk of the paper presents definitions of art terms and multiple choice questions intended to develop student concept formation, verbal association, and discrimination of proportion, space, drawing, composition, form, and line. (Author/DB)

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INSTRUCTIONAL ACTIVITIES TO DEVELOP STUDENT CONCEPT LEARNING AND PROBLEM-SOLVING SKILLS IN ART EDUCATION: A PROPOSED MODEL

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INSTRUCTIONAL ACTIVITIES TO DEVELOP STUDENT CONCEPT LEARNING AND PROBLEM SOLVING SKILLS IN ART EDUCATION

INTRODUCTION

A major problem in the field of art education is the fact that many of the terms are loosely used and their definitions are not specific. The use of terms varies from teacher to teacher and definitely contributes to a discrepancy between what teachers would like to teach or think they teach and what they, in fact, do teach.

Student conceptions are often vague or contrary to what is intended by the teacher. If no specific definition is articulated by the teacher when a term is used the meaning implied may easily be misunderstood or misused by the students. If this occurs, the teaching of art appreciation or aesthetic awareness becomes meaningless. Without an adequate understanding of the concepts being studied, students are less likely to understand, explain, or make meaningful decisions about works of art.

One step toward improving instruction and increasing student learning in art education is to assist teachers in developing precise definitions of the concepts to be studied. However, developing precise definitions in itself will not be enough. In order to be effective, teachers must know ways of incorporating these definitions into an overall instructional strategy. Such a strategy should include the planning and development of conceptually-based art-oriented instructional activities designed to achieve higher levels of student learnings.

The purposes of this paper are to report an attempt to use a model, proposed by Stahl, Button, and Corbett (1975) for social studies

instruction, in the realm of art education and to suggest ways one might plan for and develop art instructional activities consistent with this model. Specifically, the paper will: (1) Describe the components of the model as they may be used in art education; and (2) present classroom instructional activities developed to be consistent with the first three of these five complex levels of student learnings.

EXTENDING GAGNE INTO ART

The literature related to concept learning and the conditions of learning described by Gagne (1970) suggest that Gagne's model as modified by Stahl, et. al., (1975) can be extended into the aesthetic dimension of experience in order to fit the nature of art education. Five of Gagne's levels of learning - Problem Solving, Principle or Rule Learning, Concept Learning, Discrimination Learning and Verbal Information Learning-possess the greatest potential for those who would teach conceptually-based art content and logical procedures of aesthetic analysis. In order to use these five levels, modifications and clarification of Gagne's model at the concept definition stage and the rule learning and problem-solving levels were made by Stahl and associates to make their model consistent with social studies concepts and data. This model as modified is consistent with art education and aesthetic concepts and data which occur in all the humanities fields.

DEFINING CONCEPTS

Concepts are abstractions by which men sort out and arrange different aspects of human experience. The names given these abstractions are

labels assigned to specific and unique activities, behaviors, or phenomena for the purpose of assisting an individual to understand and find meaning in his experiences. Concepts and their labels also enhance an individual's ability to describe and explain more consistently and correctly his experiences and enable him to communicate more effectively to others.

Given that they are labels for abstract phenomena, concepts may be defined in terms of the situational or observable conditions necessary for the application of the appropriate label. Such definitions can be written to stipulate clearly the condition(s) that must be present in order for the concept-label to be accurate. Either the condition implied by the label exists or it does not.[1] If the specific condition is met, then it can be described by attaching to it the concept-label of congruent with the condition. For example, the concept-label of "Drawing" may be defined abstractly as:

> If and only if a person intentionally uses a marking implement to produce an image (pictorial or symbolic), then drawing exists.

In order to write Abstract Definitions in the form of biconditional statements each concept-label selected for study should be investigated in order to determine how scholars in various humanities disciplines define the concept-label and how they use the label to categorize

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[1]Every concept applicable to art education may be defined abstractly in terms of its prerequisite conditions. Such definitions can take the form of "If and only If..., then..." biconditional statements, ("If and only if the conditions for 'A' are met, then concept 'A' exists.").

phenomena. For example, the abstract definition of the concept "drawing" presented above resulted from an investigation into the fields of architecture, engineering, sculpture, painting, and philosophy. With definitions acquired from scholars in disciplines such as these serving as the empirical basis for synthesis, a concept can be defined abstractly in terms of the conditions which are unique to it. At the same time the concept remains consistent with the humanities disciplines and the fine arts. Using this approach to defining concepts, abstract definitions expressed in a biconditional manner can be especially useful for art or aesthetic instruction because they are not tied to any specific fine art discipline. Viewed this way, art concepts are, by definition, "content-free."

After arriving at an abstract definition, the first of three dimensions of defining concepts, each concept can be further analyzed and defined along two additional dimensions (see Figure 1). The

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Figure 1 about here

Second Dimension, the Conditional Definition, provides for each concept to be examined from the perspective of producers and critics in the humanities in terms of the conditions which are present when the concept-label is used. In other words, this dimension of defining concepts considers how different artists and critics in the humanities use a concept-label to explain or describe different artistic or aesthetic phenomena.

I. Abstract Definition	If and only if_____
II. Conditional Definition	Fine artists use this concept in the following situations:_____
III. Utilitarian Definition	Fine artists use this concept in order to interpret and explain the following types of phenomena:_____

Figure 1. The Three Dimensions of Defining Concepts (cited in Stahl et al., 1975)

For example:

> Drawing is likely to be occuring when an automobile body designer sits at his desk with pencil and paper to plan the 1978 model.
>
> or
>
> Drawing is likely to be occuring when art students with newsprint pads and charcoal are seated around a model posing in class.

The Third Dimension, The Utilitarian Definition, identifies specific situations or events which would be examples of the concept within specific disciplines. The examples an engineer, draughtsman, architect, painter, or sculptor would give to illustrate the concept of drawing would fit this dimension of defining concepts. Some examples are:

- The architect, Frank Lloyd Wright, completing plans for his "Falling Water House". . . .
- The artist, Michelangelo, making sketches called "cartoons" before painting The Sistine Ceiling . . .
- The draughtsman, Joe T. Square, working on isometric projections of machine parts . . . .

Besides providing for increased understanding of the more abstract dimensions of the concept, the conditional and utilitarian dimensions serve to provide clarification for those who find content-specific examples more illustrative. However, these definitions-by-example do not provide the clear-cut understanding of the concept-label needed by those who wish to learn, comprehend, or criticize aesthetic phenomena.

The three-dimensional approach to defining concepts treats each concept as (1) an abstraction, (2) in terms of the conditions looked for in fine arts, and (3) by contextual examples. This approach also provides insight into the relationships which exist between and among concepts. While engaged in the process of defining a concept along three dimensions, one begins to see ways concepts tend to cluster with other concepts.

CONCEPT CLUSTERS:

In the process of analyzing art and aesthetic content and phenomena, one becomes aware that in many instances, certain conditions tend to occur in close proximity to each other. These conditions appear to be related indirectly or comcommitantly to one another. In most instances one does not find a concept (or a condition consistent with a concept-label) appearing in isolation. In fact, the nature of all concepts suggests that as an individual finds one concept (set of conditions) present, one also finds present conditions consistent with at least one other concept. For example, when a situation is found where "drawing" exists, one usually finds instances of "composition," "form," "line," "proportion," and "space" also present. This pattern of relationships among concepts suggests that rather than approach art education concept-based instruction in terms of a number of randomly selected, heirarchial, or isolated concepts, a "concept cluster" can be identified and used. (see Figure 2)

Additional concepts may be clustered with "drawing." Among these concepts are "design," "pattern," "volume," "depth," and "perspective." In effect the cluster approach recognizes that art products and art

Figure 2 about here

production concepts tend to appear in multiples and in combination with other concepts. The "cluster" provides a useful construct to describe and analyze the kinds of aesthetic phenomena encountered by artists. Furthermore, use of this construct enhances the possibility for knowledge of one concept in a given cluster to broaden and deepen knowledge of other concepts in the same cluster.

PRINCIPLE OR RULE LEARNING

The adoption of the concept cluster approach facilitates the movement of art instruction into the principle or rule-learning level of the model. Because the concepts included in a given concept cluster are already related within the same concept domain, the concept cluster approach facilitates the formulation of logical relationships among art and aesthetic concepts.

Principles state relationships among concepts. In the language of the model one forms a rule by chaining two concepts. Since rules are propositions that are sufficiently probable to warrant verification in particular cases, art-related rules should be based on logical and empirical grounds. For example, the rule, If "drawing" exists, then "composition" is probable, not only chains the concept "drawing" with the concept "composition," but it also states a proposition that has a high probability of being valid. (see figure 3) Art rules, especially

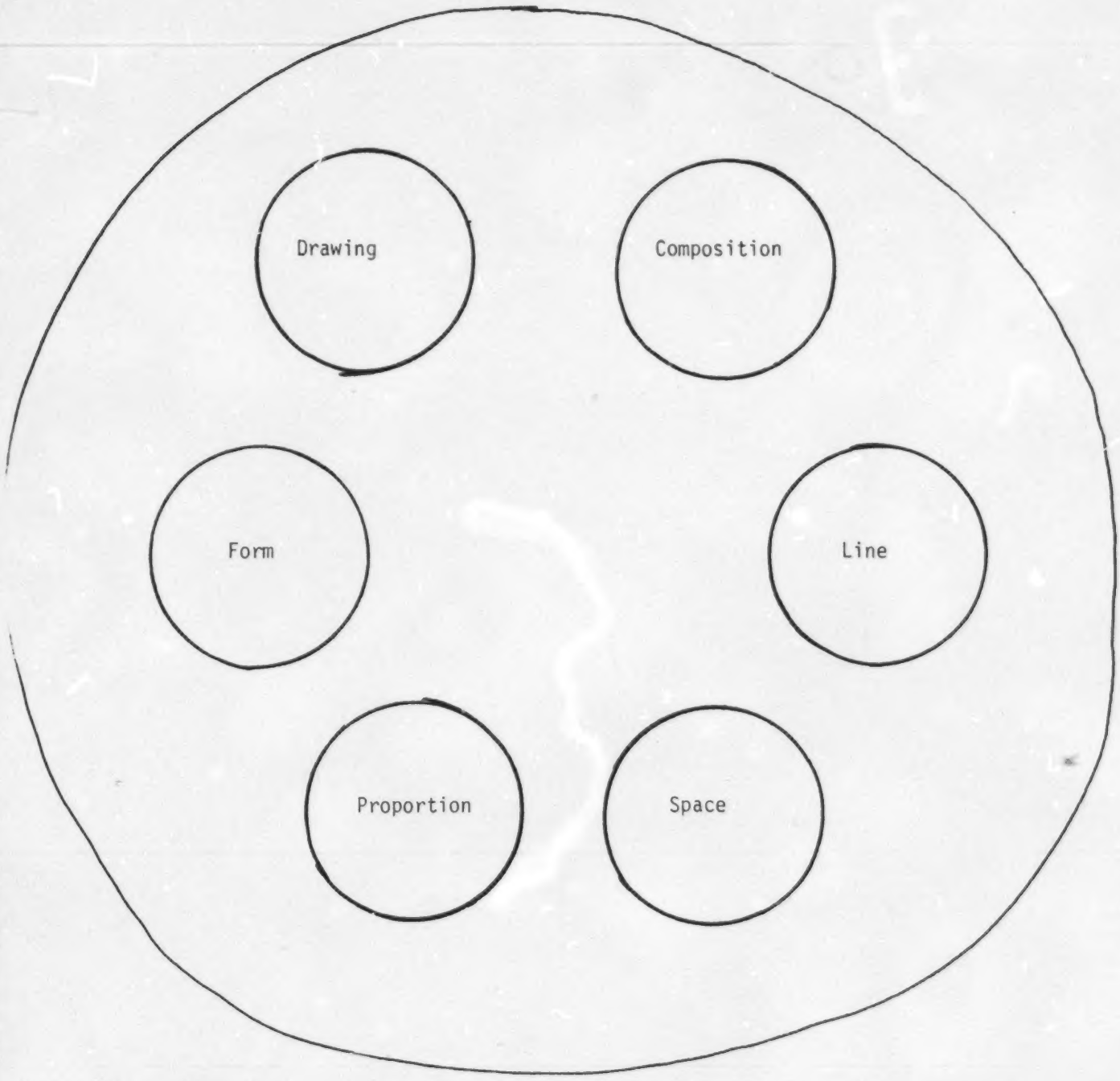

Figure 2: Examples of the concepts which may be associated with the "concept cluster" entitled "Drawing."

when using concepts from within a given cluster, have a high probability of occurrence and as such are worthy of consideration and investigation. In reference to the above example, a situation where drawing is present,

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Figure 3 about here

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there is sufficient reason to expect composition will be present.

When stated, art-related principles can take the form of "If . . . ," then . . . ." conditional statements (i.e., "If concept A is present, then concept B is also likely to be present"). This form of statement allows one to see more clearly the relationship between two concepts such that as data are analyzed and one concept of a given cluster is found to exist, then one should look for and expect to find other concepts as well. These principles can be checked empirically against the data encountered in any art-related or aesthetic situation, and they can be tested logically by inferring what is probably true but not provided specifically in such a situation.

Principles or rules may take one of three forms: (1) Those that are reciprocal or valid because they are based on logical or empirical grounds such as "If drawing exists, then composition exists." Because the conditions in the abstract definitions for these two concepts imply an overlapping relationship. (2) Those that are probable because they are highly possible and because they occur frequently. An example would be drawing and proportion. Many "drawings" include "proportion." (3) Those that are likely because they identify situations where two

I. A Reciprocal Rule. "If drawing, then composition exists."

II. A Probable Rule. "If composition, then space is probable."

III. A Likely Rule. "If line, then proportion is likely."

Figure 3. Three Forms of Principles or Rules

concepts are not necessarily found together, 3.g., "line" and "proportion."

PROBLEM SOLVING SKILLS

At the problem solving level, rules are combined so that when students encounter complex aesthetic situations they may make meaningful aesthetic judgements or critiques. These judgements or critiques may concern a completed art product or may be made during various stages of the process of producing an art object. The model allows for a number of plausible solutions to fit a given problematic situation. It also allows for a number of plausible explanations for a given problematic situation. Since decision-making situations regarding art and aesthetic phenomena frequently allow for several possible explanations, activities at the problem solving level cannot be restricted to one correct explanation or solution. For example, in order to develop a solution for a particular problem in a student's sketch, a teacher might ask the student to explain which lines should be changed in order to correct the disproportion. In another case a teacher might ask a student to analyze an art product on the basis of art-related concepts and logical rules. In both situations just described students explain and offer solutions using art-related concepts and combining art rules. To interpret data.

To create activities for the purpose of developing problem solving skills, the type of problems the students are to resolve as a result of instruction are pre-determined by the teacher. The categories of student verbal behavior consistent with the process of problem solving are known. However, the particular combination(s) of rules, the explanation of

relationship among rules, and the suggested policies for resolving the given problems are left open to student thinking.

A MODEL FOR PLANNING AND INSTRUCTION

In order to plan for and develop instructional activities for each of the five levels of the model, the five types of learning congruent with these levels can be arranged in a hierarchy and visualized as stair steps (Figure 4). According to this model, when

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Figure 4 about here

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one begins to plan instruction, he first identifies the kinds of problems students are to resolve as a result of the instruction. Having identified the kinds of problems to be solved, one isolates the rules students are to combine in order to analyze and solve the problems. Knowing the rules, one analyzes the rules in order to determine the concepts that are to be diagnosed for and, if necessary, which are to be taught. Working knowledge and understanding at the conceptual level would require the ability to discriminate among phenomena using defining attributes. Such discriminatory abilities are dependent on student learning of prerequisite Verbal Information.

The order of planning is to be contrasted with the sequence of instruction. In Diagnosing and planning, the teacher moves from the complex (e.g., problem solving) to the more simple learning tasks (e.g., verbal information). In teaching, one moves from the simple (e.g., verbal information) to the more complex learning tasks (e.g., problem solving). A visual description of how the model is used in order to

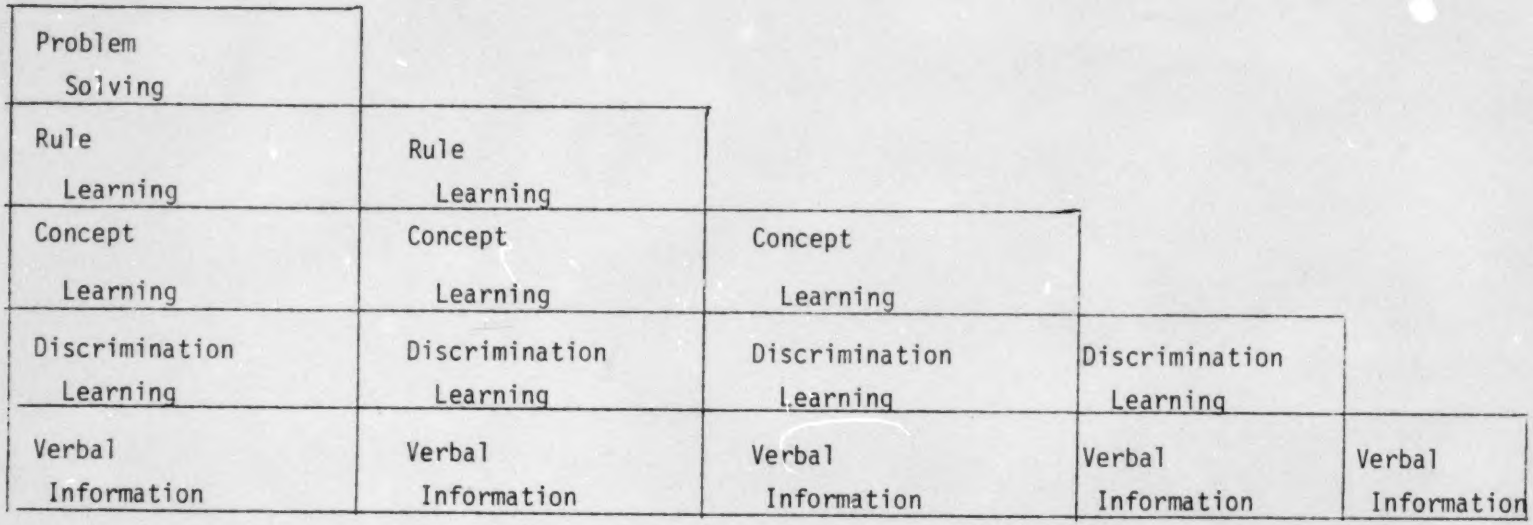

Figure 4: Hierarchy As Applied to Planning Instruction

(Cited in Stahl Et Al., 1975)

sequence instruction is presented in Figure 5.

Instructional activities consistent with each of the five levels tend to function in these ways. First, they help identify those

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Figure 5 about here

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students who cannot operate successfully on a given level. Second, they help identify those students who are already operating on a given level. And after taking these two functions into account, they can serve to provide the conditions which should enable students to build upon their lower level learnings in order to develop higher level learnings. In the language of the model students would transfer certain understandings from one level to assist them in learning at the next level. Used in this way, these instructional activities then become learning activities for students. When students demonstrate successful completion of one or more learning activities on a given level, then the teacher has available data on the basis of which he can infer that student learning has taken place.

Examples of activities for discrimination and concept learning levels are to be found following the list of abstract definitions.

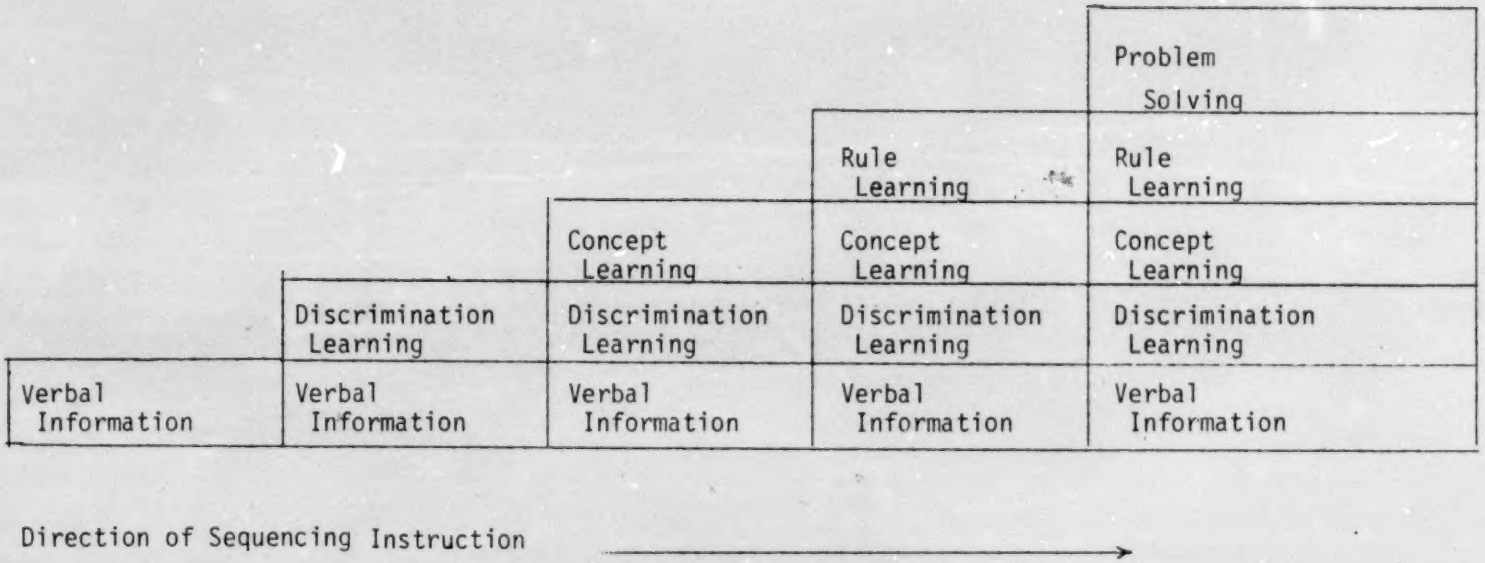


Figure 5: Hierarchy As Applied For Sequencing of Instruction

(Cited in Stahl Et Al., 1975)

ABSTRACT DEFINITIONS FOR THE VERBAL ASSOCIATION LEVEL

DRAWING; If and only if aperson intentionally uses a marking implement to produce an image (Pictorial or Symbolic), then drawing exists.

COMPOSITION: If and only if two or more entities are contained within the limits of a field (Domain, System, Sphere), then composition exists.

FORM: If and only if the distinguishing characteristics of an entity's construction are identifiable, then form exists.

LINE: If and only if a real or imagined link exists between two or more entities (i.e., Points, Places, Ideas, Etc.), then line exists.

PROPORTION: If and only if the relationship between two parts of one entity to two corresponding parts of a second entity is equal, then proportion exists.

SPACE: If and only if there is an empty place in which an imaginary point could move in any direction, then space exists.

DISCRIMINATION LEARNING LEVEL

DRAWING: If and only if a person intentionally uses a marking implement to produce an image (pictorial or symbolic), then drawing exists.

Put a check in front of the letter in each set of two that is the example of the concept of drawing.

1. ✓A. I am using a pencil to make a fast sketch of my dog.
   ___B. I am using a camera to take a photograph of my fish.

2. ___A. Sue points out to John the way to the camphouse without crossing the bridge.
   ✓B. Sue uses a popscicle stick to make a map in the sand showing Joe the way to the store.

3. ___A. One passenger brushes her sleeve against the fogged bus window as she waves goodbye to her friends crowded together in the station.

   ✓B. One passenger uses her index finger to make a smiley face on the moist train window for a little boy standing on the platform.

4. ___A. He copies the words describing the ocean which he will use in his next poem.

   ✓B. He copies the shapes of the mountains on his pad so that he can use them in his mural.

5. ___A. Learning a lot about drafting tools, an architect knows how to use them before he designs houses.

✓ B. Using the same tools that a draftsman does an architect makes a final set of house plans.

6. ✓ A.

___B.

Which illustrates the concept of drawing?

DISCRIMINATION LEARNING LEVEL

COMPOSITION: If and only if two or more entities are contained within the limits of a field (Domain, System, Sphere), then composition exists.

Put a check in front of the letter in each set of two that is an example of the concept of composition.

1. ___A. "My Favorite Presidential Candidate" is the title of my history report.

   ✓ B. Quotations, personal opinions, and ideas make up the body of my report.

2. ✓ A. Ninety percent pure gold and ten percent worthless materials are in this nugget.

   ___B. This nugget is considered to be very valuable because of its size so I'll keep it.

3. ✓ A. Three kinds of Chinese tea leaves are blended in the tea in this pot.

___ B. The tea grown in China is a favorite choice of many English people.

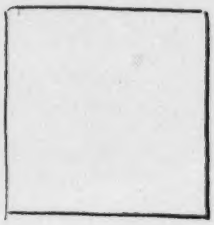
4. ___ A. Pencils, charcoal or pens may be used to draw with today.

✓ B. A pencil, flower, vase and cloth are included in my drawing.

5. ___ A. Being able to read a musical score is one of the abilities which a symphony conductor must possess.

✓ B. All of the notes, directions and other elements necessary for a complete performance are within a musical score.

6. ___A. This square represents a blank piece of paper.



✓ B. This square represents some items on my desk.

DISCRIMINATION LEARNING LEVEL

FORM: If and only if the distinguishing characteristics of an entity's construction are identifiable, then form exists.

Put a check in front of the letter in each set of two that is the example of the concept of form.

1. ___A. A gray, lively, breathing and snorting thing is moving around under the rag.

   ✓ B. A hard, cold, smooth, heavy and perfectly round object is in the large box.

2. ✓ A. The shape of a person's head is basically like an egg.

   ___B. The pain of a headache is really impossible to describe.

3. ✓A. A two by four inch, thirty six inch long, smooth redwood plank is on the beach.

___B. The odor and color are distinct characteristics of this stuff.

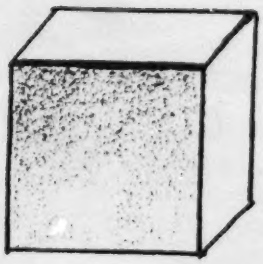
4. ___A. The author's ideas, plot summary, a listing of the high points in the story and personal conclusions are included in John's book report about the novel.

✓B. The outline used in Al's report follows the major heading, primary sub heading, and secondary subheading style recommended by the book.

5. ✓ A. Grasping the rings in his hands and beginning with his arms straight by his sides, the gymnast slowly lowers his body until his arms are extended straight out from the shoulder as he executes a perfect Iron Cross.

___B. Gasping, the marathon runners returned to the Olympic Stadium exhausted with the effort spent on the long race which was as important to them as the hundreds of other events were to the other participants.

6. ___A.

✓ B. 

DISCRIMINATION LEARNING LEVEL

LINE: If and only if a real or imagined link exists between two or more entities (i.e. Points, Places, Ideas, Etc.), then line exists.

Put a check in front of the letter in each set of phrases that is an example of the concept of line.

1. ___A. The car I drive to work in is quite worn out . . .
   ✓ B. The route I use to get from my house to school . . .

2. ___A. A locomotive that pulls a train from Columbus, Mississippi . . .
   ✓ B. A railroad track that runs from Columbus to Greenville . . .

3. ✓ A. The worn path from my back door to the doghouse . . .

___B. The area in my backyard filled with bare spots . . .

4. ✓ A. The beautiful arc, loops, and slow downward spiral made by the rocket as it slices through the air . . .

___B. The jumbled mass of smashed and broken fragments partially covered with soggy red dirt and leaves . . .

5. ___A. A shelter and a fire built during the camping trip . . .

✓ B. The trail blazed from the shelter to the stream . . .

6. ___A.

✓ B.

DISCRIMINATION LEARNING LEVEL

PROPORTION: If and only if the relationship between two parts of one entity to two corresponding parts of a second entity is equal, then proportion exists.

Put a check in front of the letter in each set of two that is an example of the concept of proportion.

1. ✓ A. The number of people per square mile in Mississippi is the same as the number of people per square mile in Peru today.

   ___ B. The number of people per square mile in Mississippi is yet to be counted in all of the rural and urban areas this year.

2. ✓ A. During the sale the amount this dress costs is reduced to one-forth of the original price. I'm paying five dollars for it so I know the original price was twenty dollars.

   ___ B. During the sale the amount this dress costs is greatly reduced from the original price. I'm paying just a few dollars for this dress so I think I'm getting a great bargain!

3. ___A. The blueberry bushes next to the storage shed in my yard are blooming and I would like to make a drawing of them. I want to be sure that my picture looks right and I'm sure I know what to do.

   ✓ B. The bushes are two feet high and the shed next to them is six feet high. The scale for my drawing is 1 in. = 1 ft. so I will make the bushes two inches high and the shed six inches high.

4. ✓ A. If you remove one egg from a dozen eggs it is reduced by the same amount as if you remove one inch from a foot.

   ___B. If you remove one egg from a crate of eggs it is reduced by one egg from what ever number of eggs was in the crate.

5. ✓ A. My lunch cost $3.00 so I left 60¢ for a tip. Sally's was $2.00 and she left 40¢ for the tip.

___B. My lunch cost more than Sally's lunch but since she liked the waiter she left a bigger tip.

6. ✓ A.

___B.

DISCRIMINATION LEARNING LEVEL

SPACE: If and only if there is an empty place in which an imaginary point could move in any direction, then space exists.

Put a check in front of the letter in each set of two that is an example of the concept of space.

1. ___A. The pieces in this puzzle, which is extremely difficult to put together, are all shaped like cubes and pryamids.

   ✓ B. The area in this box will hold all five geometricallv shaped pieces if they are put together in the correct way.

2. ✓ A. The room in my purse is big enough to hold my lipstick, billfold, glasses, and quite a few other things.

   ___B. The room in my purse is filled to the limit with my personal things and as many drawing things as possible.

3. ✓ A. The spot reserved for the school bus is vacant so we can park there.

___B. The spot reserved for the school bus is occupied by a large camper.

4. ✓ A. The area close to the water and near the refreshment stand is available for us to use when we go to the beach.

___B. An area large enough for us to spread out our blanket is not available at the beach because it is so crowded.

5. ✓ A. The void between Mars and Earth is so vast that it takes nineteen minutes for messages to get to earth from Viking 1.

___B. The crack between the mailboxes in the tenement is stuffed with old newspapers and bits of orange rinds and trash.

6. ___A.

✓ B.

Which of these two pictures illustrates the concept of space?

CONCEPT LEARNING LEVEL

DRAWING

Put a check in front of the letter in each set of four that is an example of the concept of drawing.

1. ___A. In this documentary filming techniques are being used to illustrate life in a mining camp during the early gold rush days.

___B. In the narrative a veteran actor's techniques are illustrating the emotions of the miner who first found gold at this site.

✓ C. In the designs for the set charcoal techniques are being used to illustrate the props and lighting needed in the bunkhouse.

___D. In this scene the miners are illustrating their digging techniques using simple tools - axes, picks, and shovels.

2. ___A. A yellowing old print is being cleaned to hang over the fireplace.

___B. A scrapbook full of momentos is being made to be placed on the table.

✓ C. A map is being made to show the exact spot where a claim was staked.

___D. A reflection of the miners face in a mirror is showing how serious he is.

3. ___A. This portrait is being created with a number of curved and bent copper wires.

✓ B. This portrait is being created with a number of curved and bent inked lines.

___C. This portrait is being created with a number of welded and bent found objects.

___D. This portrait is being created with a number of curved and molded pieces of clay.

4. A number of artists and craftsmen are demonstrating their skills at a festival. Below is a list of what each is using. Put a check in front of the one you know is drawing.

___A. Edith is using a vat of red dye and bolts of pure cotton cloth.

___B. Tom is using solid steel chisels and huge, thich redwood stumps.

✓C. Nancy is using red conte crayons and a tablet of rich vellum.

___D. Jan is using steel crochet hooks and red, gold and yellow string.

___E. Bob is using fire, red hot glass, steel pipes, tongs and bellows.

Drawing contd.

5. You are going to get to know some famous Alfreds in History. You will be introduced to them and get to know them in various ways and one of them is as a result of DRAWING! Put a check in front of the one you meet as a result of drawing.

You are introduced to. . . . . .

___A. ALFRED J. PRUFOCK who is being portrayed as a pathetic person in T.S. Eliot's work "The Wasteland".

___B. ALFRED TENNYSON who is being nominated by one critic as being able to portray anyone poetically.

___C. ALFRED EINSTEIN whose formula $M = ad^2$ is being written on the board so you can see how smart he is.

✓ D. ALFRED E. NEUMAN who is being cartooned for another appearance on the cover of "MAD" magazine.

CONCEPT LEARNING LEVEL

COMPOSITION

Put a check in front of the sentence in each group of four that is an example of the concept of COMPOSITION.

1. ___A. The heavy iron skillet is sitting there empty.
   ___B. The cook is chopping the food into small cubes.
   ___C. The burner is turned to it's very lowest setting.
   ✓ D. The beef and vegetable stew is simmering in the pan.

2. ___A. This object certainly looks interesting.
   ___B. This felt tip pen certainly looks pointed.
   ✓ C. This dotted drawing certainly looks finished.
   ___D. This art grade of an A certainly looks good!

3. ___A. The daffodils are golden yellow.
   ___B. The Dutch Iris is a deep purple.
   ___C. The ferns are a beautiful green.
   ✓ D. The flowers make a lovely bouquet.

4. ___A. Give me a capital A !
   ___B. Give me a little r !
   ___C. Give me a final T !
   ✓ D. All together they spell Art!

CONCEPT LEARNING LEVEL

FORM

Put a check in front of the letter in each set of four that is an example of the concept of FORM.

1. ___A. The object in the pryamid appears to be made of twenty-four carat gold and it is inlaid with semi-precious stones and it is decorated with enamelled designs.

___B. The object in the pryamid appears to be extremely important and valuable. It is the largest object in the tomb and is placed higher than the other items.

✓ C. The object in the pryamid appears to be made from a cast of the pharoah. It is a life size figure of a man lying down with his hands crossed over his chest.

___D. The object in the pryamid appears to be made by several craftsmen of varying degrees of skill. The gold work is very fine but the stones are crudely cut.

2. ___A. The clouds in the drawing are dark, smudged pencil areas.

___B. The clouds in the drawing show that a storm is brewing.

___C. The clouds in the drawing remind me of something I've seen.

✓ D. The clouds in the drawing are shaped like little pillows.

Form contd.

3. ✓ A. The star of David has a hexagon in the center with six equilateral triangles making the points on each side.

___B. The stars on the American flag are in a new arrangement now because we have taken in several more states.

___C. The stars at night are big and bright deep in the heart of the state which used to be our largest.

___D. The stars in the Milky Way are so plentiful that they appear to be a stream of milk flowing through the night sky.

4. The scouts were on a camping trip. In the middle of the night four were awakened by a disturbance. They all thought it was the abominable snowman! Below are their versions of what it was. Which one describes its form?

✓ A. "He cast a shadow in the moonlight that showed a long rectangular body with a tiny triangular head nodding at the top before he left."

___B. "He was tall and made grunting and groaning sounds before he bounced away. I'm sure he was very hungry by the creaking sounds he made."

___C. "He was dark and he kind of whistled and panted like the wind does before he knocked over the flagpole that we had our troop flag on."

___D. "He was a big blur and I know he was hungry because our rations are spread all around the ground where he knocked over the flagpole."

CONCEPT LEARNING LEVEL

LINE

Each set of four phrases contains an example of the concept of line. Put a chekc in front of the example of LINE in each set.

1. ___A. Soldiers milling around the compound laughing and shouting. . .
   ✓ B. Soldiers standing in straight rows preparing to march forward . . .
   ___C. Soldiers tangled together during hand-to-hand combat practice . . .
   ___D. Soldiers lounging around the P.X. selecting post cards to send. . .
2. ___A. Tiny little shells sprinkled all over the beach in a random pattern since the storm . . .
   ___B. Small shells glistening and shimmering in soft irridescent colors of pinks and golds . . .
   ✓ C. Sixty shells strung together to make a necklace long enough to loop over my head . . .
   ___D. A collection of shells which includes at least one perfect shell of every kind . . .

Line contd.

3. Four different kinds of cloth are described below. The pattern of one is based on the concept of line. Put a check in front of the one which is an example of line.

___A. Splotches of color which melt and disolve into the background are on the tie-dyed linen.

✓ B. Horizontal and vertical stripes which cross over and under each other are on the plaid.

___C. Nubby little bumpy, fuzzy, linty things are on the soft looking but scratchy wool.

___D. Little brown specks on a pale natural color are on the undyed, unbleached muslin.

4. You asked John to draw a line between two cities on the map. Of the following, put a check in front of the example of line.

___A. John points to each of the two cities named by you.

___B. John makes a dot on each of the two cities named.

✓ C. John connects the two cities with a straight mark.

___D. John marks a spot haly-way between the two cities.

CONCEPT LEARNING LEVEL

PROPORTION

In each group of four below there is an example of the concept of proportion. Put a check in front of the example of proportion in each set.

1. ✓ A. If you measure a man you will find that his height is the same as seven times the length of his head so when you draw a man standing you should make the man seven times as long as the head in the picture.

___B. If you measure a man you will find that his height will be the same as the distance from the top of his head to the bottom of his feet if he is standing up when you are measuring him for the picture.

___C. If you measure a man and you find that his height turns out to be seven feet it would be a good idea to check your measurements again and if you get the same result the next time have your eyes checked.

___D. If you measure a man you may find that his height does not come out seven times the length of his head but that shouldn't shake you up to much because as you know all men are the same but not alike!

2. ___A. John is posing with his hands held out as far apart as possible. We have square pieces of paper to draw him on and we need to find a way to fit his entire body on the paper and have it right.

___B. John is posing with his hands held out as far apart as possible. I'm worried that I will make his shoulders larger than they should be. However, I can always make his head larger.

✓C. John is posing with his hands held out as far apart as possible. We measured the distance from his fingers on one hand to the other and found it to be exactly the same as his height.

___D. John is posing with his hands held out as far apart as possible. I drew him so that his hands, feet and the face are all the same size and color. The drawing is fantastic!

3. ✓A. Even though illustrators make their figures so they seem unusually long and skinny compared to actual people, the figures keep the head size about the same in respect to the whole figure.

___B. Fashion illustrators make their figures unusually long and skinny looking so they can show off the clothes they have designed.

___C. Fashion illustrators make their figures unusually long and skinny so the clothes they have designed will look better designed.

___D. Even though fashion illustrators make their figures unusually long and skinny looking, you can really tell what the clothes will look like when they are put on the figure of normal people.

4. ___A. $\frac{1}{2} = \frac{3}{4}$

___B. $\frac{1}{2} = \frac{2}{3}$

✓C. $\frac{1}{2} = \frac{2}{4}$

___D. $\frac{1}{2} = \frac{4}{5}$

CONCEPT LEARNING LEVEL

SPACE

In each group of sentences below there is one sentence which includes a use of the concept of space. Find it and put a check in front of the one which is an example of the concept of SPACE.

1. ___A. This area in the drawing has such a rich texture that you can almost feel it.

   ✓ B. This area in the drawing has nothing in it and could be filled in with a few dots.

   ___C. This area in the drawing has a very beautiful form indicating the profile of the girl.

   ___D. This area in the drawing has a jagged rock with a large wave curling over it.

2. ✓ A. The ball is zinging back and forth between the bells in the machine as Tommy, the pin-ball wizard, takes his turn.

   ___B. The quarters are worth about five dollars that Jimmy, the big spender, has taken out even before he starts to play.

   ___C. The scores flashing are being watched by David, the shrewd operator, in order to see which player he'll challenge.

   ___D. The highest score of anybody is what Steve, the big braggart, claims he will make when it is his turn to play.

Space contd.

3. ___A. An equal amount of pressure should be applied as you slice the mat board with the razor when cutting a mat for your drawing.

   ✓ B. An equal amount of margin area should be on each side of your mat so you must be sure to center your drawing carefully.

   ___C. An equal amount of care should be taken with both the drawing and the mat board while you are cutting with a sharp blade.

   ___D. An equal amount of pride in your craftsmanship should go into cutting a mat as in the drawing you are mounting on it!

4. ✓ A. One-hundred and sixty acres of open land is free territory for any homesteader who wants it in Alaska.

   ___B. One-hundred and sixty acres of land located here is completely planted with trees and has no room for a home.

   ___C. One-hundred and sixty acre homesteads are no longer available because all the land has been claimed and used.

   ___D. One-hundred and sixty acres is quite a responsibility and means hard work and possibly some disappointments.

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